ABSTRACT

A method of reducing complexity in a Viterbi decoding algorithm used in intersymbol interference channels is provided. The method includes the steps of identifying a survivor path for an input symbol, making a hard decision about a polarity of the input symbol based on the identified survivor path, identifying a plurality of dominant error events for which the opposite polarity would be determined for the input symbol, measuring a penalty metric value based on the identified survivor path for each of the plurality of dominant error events, choosing a dominant error event having a least penalty metric value from the identified plurality of dominant error events, and calculating an approximation to a logarithmic likelihood ratio for the input symbol based on the survivor path and the chosen dominant error event.

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